



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR ,	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,148	07/07/2003	Koji Nagata	520.42915X00	6729

20457 7590 10/18/2005

ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-3873

EXAMINER

JARRETT, RYAN A

ART UNIT PAPER NUMBER

2125

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/613,148	<b>Applicant(s)</b> NAGATA ET AL.	
	<b>Examiner</b> Ryan A. Jarrett	<b>Art Unit</b> 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☒ Claim(s) 11-13 is/are rejected.
- 7) ☒ Claim(s) 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's arguments, see page 8, filed 9/28/05, with respect to the rejection under 35 USC 101 have been fully considered and are persuasive. The 35 USC 101 rejection of claim 11-15 has been withdrawn.

Applicant's amendment to claims 2, 3, and 5, filed 9/28/05, has overcome the rejection of these claims under 35 USC 112, 2<sup>nd</sup> paragraph.

Some of Applicant's arguments, see pages 9-12, filed 9/28/05, coupled with the amendment to claims 1 and 3 have been fully considered and are persuasive. The 35 USC 102 rejections of claims 1-10 have been withdrawn. The rejection is withdrawn since Examiner agrees that Cooke and Kamiyama fail to teach the feature added to these claims in the amendment filed 9/28/05.

Applicant did not make the corresponding amendment to independent claim 11. Therefore, claims 11-13 are rejected under 35 USC 102 for the same reason that previous claims 3-5 were rejected. Claims 11-13 are essentially identical to the previous version of claims 3-5, except for the fact that they are drawn to a method and not an apparatus. Claims 11-13 were rejected under 35 USC 101, and claims 11-13 were additionally intended to be rejected under 35 USC 102 for the same reasons as previous claims 3-5, but they were inadvertently omitted from this rejection paragraph. But more importantly, the rejection below is not considered to be a "new" rejection since the prior art was already applied in a separate rejection to nearly identical claims. Thus, the Applicant has had to opportunity to amend and/or argue the merits of the claim

versus the prior art, which he has done. So the finality of this action is considered proper.

The 35 USC 102 rejection of claims 11-15 is "maintained" for the at least the following reason: Applicant argues that Cooke provides no disclosure or suggestion for applying pattern vertex data to define the pattern shapes. Rather, Applicant argues, Cooke utilizes a system wherein an initial point is used in conjunction with the length of the pattern in the x and y directions. However, this teaching of Cooke is analogous to the claimed pattern vertex data, or the pair of opposite corner point coordinates. In Cooke, the four corner point coordinates are defined by (X,Y), (X, LX), (Y,LY), and (LX, LY).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooke US 4,482,810. For example Cooke discloses:

11. An exposure method, comprising the steps of: applying a charged particle beam or a light onto a sample while controlling the application using pattern shape data in a bitmap format, and exposing a desired pattern onto the sample; decomposing the pattern shape into plurality of rectangle patterns parallel to any one coordinate axis of the orthogonal coordinates defined on the sample, and converting the pattern shape into the data format for expressing the pattern shape by a pair of opposite corner point

Art Unit: 2125

coordinates of each line parallel to any one coordinate axis of the orthogonal coordinates defined on the sample; grouping corner point data representing the respective rectangle patterns on a per given coordinate area basis, and sorting the respective grouped corner point data by reference to the coordinates of the respective corner point data; and rejecting an overlap area between patterns from the respective sorted corner point data; wherein the pattern shape data in the bitmap format based on the result of the overlap rejection function (e.g., col. 3 line 25 – col. 4 line 2, col. 7 line 67 – col. 8 line 12, claims 1-6).

12. The exposure method according to claim 11, wherein the coordinate area for grouping the respective corner point data is area corresponding to an array of pixels arranged adjacent to each other in a direction parallel to any one coordinate axis of the orthogonal coordinates defined on the sample out of pixel arrays of the bitmap (e.g., Figs. 6-8).

13. The exposure method according claim 11, wherein the line formed by the pair of the corner points representing the pattern and the direction of the bitmap pixel array for grouping the corner point data are parallel to each other, and the direction of the bitmap pixel array for grouping the corner point data and the direction of scanning of the charged beam or light are parallel to each other (e.g., Figs. 6-8).

4. Claims 1-5 and 10 are additionally rejected under 35 U.S.C. 102(b) as being anticipated by Kamiyama et al. US 6,271,852. For example, Kamiyama et al. discloses:

11. An exposure method, comprising the steps of: applying a charged particle beam or a light onto a sample while controlling the application using pattern shape data in a bitmap format, and exposing a desired pattern onto the sample; decomposing the pattern shape into plurality of rectangle patterns parallel to any one coordinate axis of the orthogonal coordinates defined on the sample, and converting the pattern shape into the data format for expressing the pattern shape by a pair of opposite corner point coordinates of each line parallel to any one coordinate axis of the orthogonal coordinates defined on the sample; grouping corner point data representing the respective rectangle patterns on a per given

coordinate area basis, and sorting the respective grouped corner point data by reference to the coordinates of the respective corner point data; and rejecting an overlap area between patterns from the respective sorted corner point data; wherein the pattern shape data in the bitmap format based on the result of the overlap rejection function (e.g., Fig. 30A, Fig. 30B, col. 3 line 35 – col. 5 line 17).

12. The exposure method according to claim 11, wherein the coordinate area for grouping the respective corner point data is area corresponding to an array of pixels arranged adjacent to each other in a direction parallel to any one coordinate axis of the orthogonal coordinates defined on the sample out of pixel arrays of the bitmap (e.g., Fig. 30A, Fig. 30B, col. 3 line 35 – col. 5 line 17).

13. The exposure method according claim 11, wherein the line formed by the pair of the corner points representing the pattern and the direction of the bitmap pixel array for grouping the corner point data are parallel to each other, and the direction of the bitmap pixel array for grouping the corner point data and the direction of scanning of the charged beam or light are parallel to each other (e.g., Fig. 30A, Fig. 30B, col. 3 line 35 – col. 5 line 17).

### ***Allowable Subject Matter***

5. Claims 1-10 are allowed.

6. Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

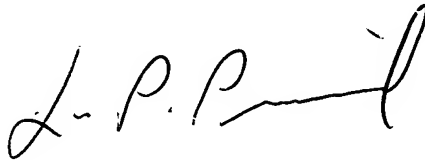
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan A. Jarrett whose telephone number is (571) 272-3742. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan A. Jarrett  
Examiner  
Art Unit 2125

10/11/05  
RAJ

A handwritten signature in black ink, appearing to read "L. P. Picard", with a stylized flourish at the end.

**LEO PICARD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**